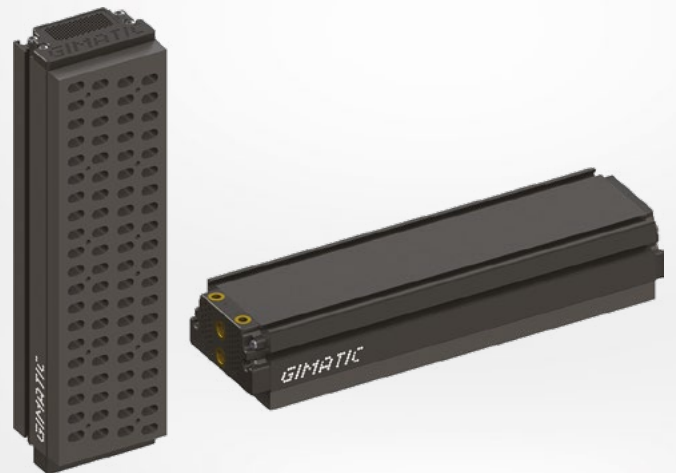


FGS-120

VACUUM GRIPPING SYSTEMS

News



Modular and versatile solution for handling products with different sizes, shapes and porosity.



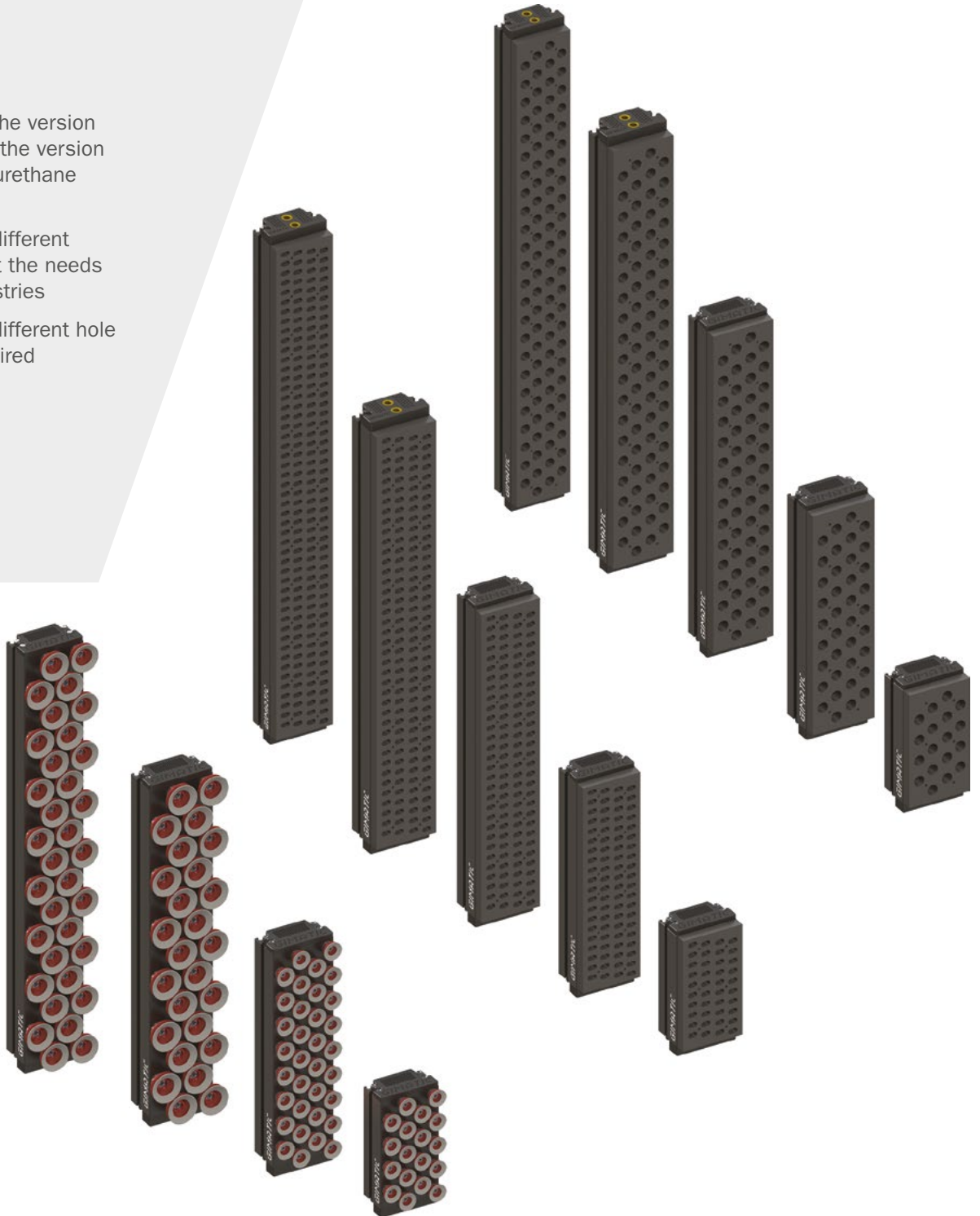


Vacuum Gripping Systems

Gimatic's **FGS-120** vacuum gripping systems are all equipped with an integrated vacuum generator and are available with self-closing valves or with calibrated holes.

The integrated vacuum generator consists of **EJ-LARGE-HF-3** multistage ejectors. These ejectors have high suction capacity, low energy consumption, no moving mechanical parts, and do not generate heat.

- > Available in the version with foam or in the version with VG.IS polyurethane suction cups
- > Available in different lengths to meet the needs of various industries
- > Available in different hole pitches as required



Typical applications

Palletizing and handling applications in different industries.



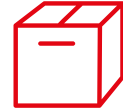
Sheet metal



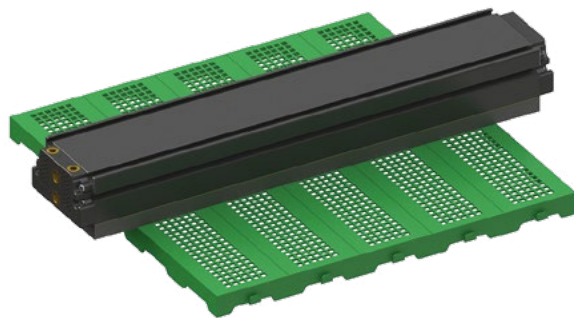
Wood



Glass



Cardboard



Ideal for handling cardboard boxes, wooden panels, cans and many other products with different formats and shapes.



Available standard sizes

Width 120 mm
 Length 200 - 400 - 600 - 800 - 1000 mm
 (Possible customizations)



Technical features



Foam features

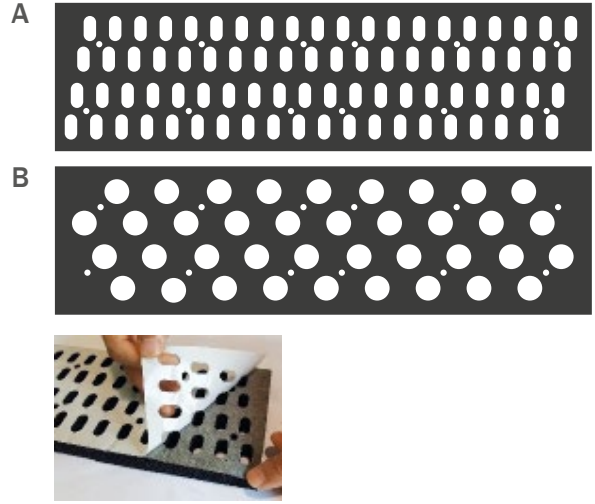
Material EPDM
 Thickness 20 mm
 Temperature range: -40 °C / +135 °C

Standard pitches:

- Fine pitch oval (A) for objects with a minimum width of 35 mm
- Medium pitch round (B) for objects with a minimum width of 55 mm

Easy to install and easy to remove.

The removal of the foam leaves no residue on the extruded piece.



Lifting force - foam

Theoretical gripping force on flat surface, with fully covered gripping surface, safety factor (N) excluded.

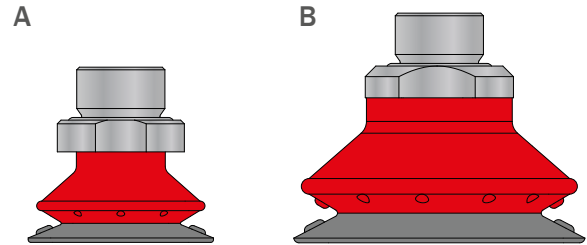
Configuration	Force (N) at various vacuum levels (-kPa) - vacuum gripping system with foam				
	-30	-40	-50	-60	-70
FGS-120-0200-F20	175	220	278	335	395
FGS-120-0400-F20	350	475	600	715	840
FGS-120-0600-F20	567	756	945	1134	1323
FGS-120-0800-F20	730	981	1227	1472	1712
FGS-120-1000-F20	920	1230	1540	1843	2150



Suction cup features

Material Polyurethane (PU)
Temperature range °C: 0°C / +50°C

Available suction cup sizes:
- VG.IS35 (A), diameter 35 mm
- VG.IS55 (B), diameter 55 mm



The VG.IS polyurethane suction cups ensure high wear resistance and adaptability to uneven and porous surfaces



Lifting force - suction cups

Theoretical gripping force on flat surface, with fully covered gripping surface, safety factor (N) excluded.

Configuration	Force (N) at various vacuum levels (-kPa) - vacuum gripping system with suction cups				
	-30	-40	-50	-60	-70
FGS-120-0200-IS35	380	485	555	620	670
FGS-120-0400-IS35	760	960	1110	1230	1340
FGS-120-0600-IS35	1148	1443	1670	1870	2025
FGS-120-0400-IS55	680	800	850	890	985
FGS-120-0600-IS55	1034	1220	1285	1340	1480
FGS-120-0800-IS55	1300	1630	1700	1760	2000

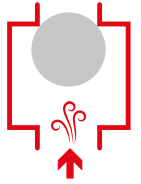


Operating principle

Self-closing valves

HOW IT WORKS

The vacuum channel has a chamber containing a metal ball. In the absence of the object to be picked up, the metal ball moves and hermetically closes the vacuum channel.

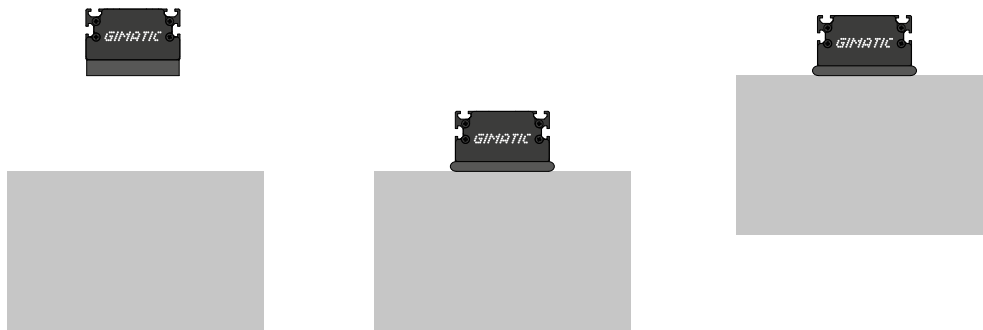


WHEN TO USE IT

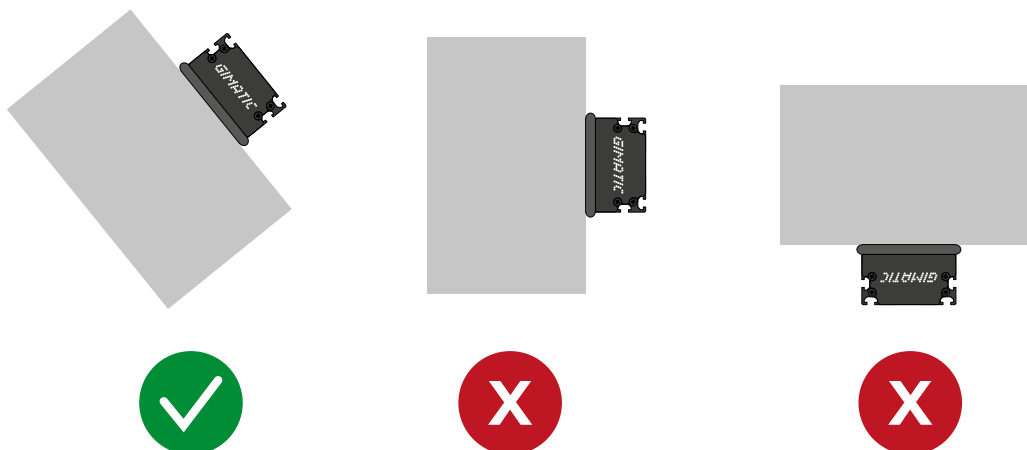
Ideal in different applications and formats, where a high level of vacuum must be maintained, despite the fact that most of the surface of the manipulator may not be gripping.

STRENGTHS

Faster, more flexible, less sensitive to dust, with lower consumption as it requires smaller pumps.



- 1.** Positioning of the gripping system on the object to be handled, parallel to the gripping surface.
- 2.** Approaching of the gripping system until contact is made with the gripping surface.
- 3.** Activation of vacuum generation.
- 4.** Picking up of the object to be handled.
- 5.** Deposit of the object with vacuum deactivation and blow-off if necessary.



Calibrated holes

HOW IT WORKS

The vacuum channel has a bottleneck (calibrated microhole), which generates a known leak in the vacuum chamber if the object to be picked up is missing.

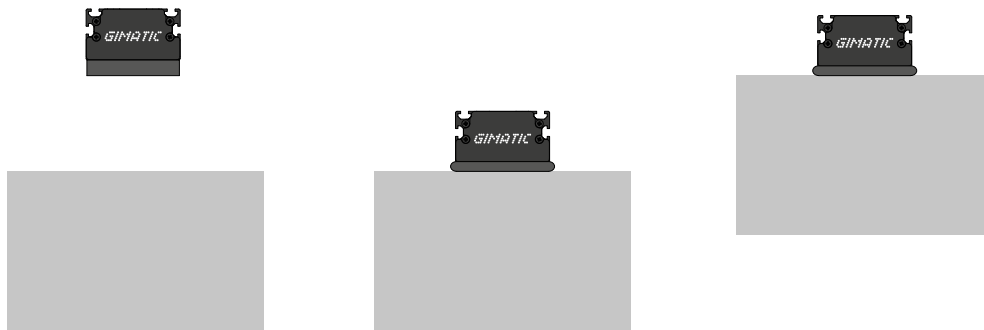


WHEN TO USE IT

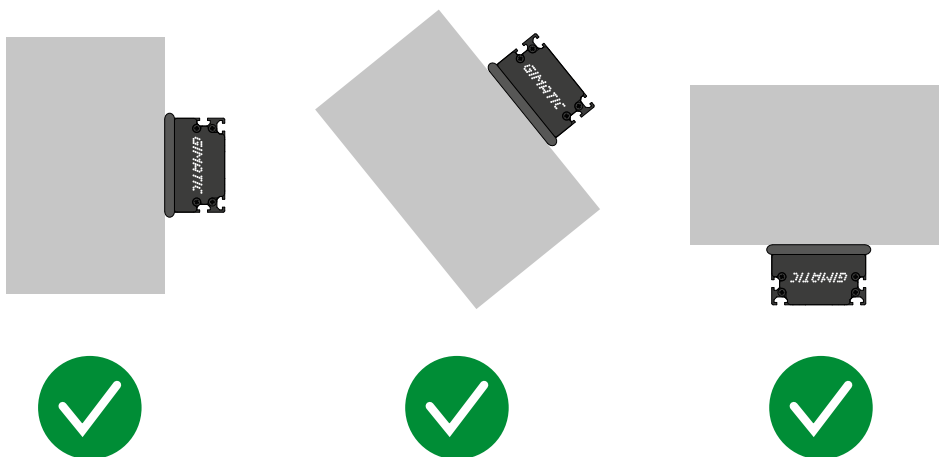
Ideal when self-closing valves cannot be used (e.g. in vertical handling applications) or when the gripping system covers about 90% of the gripping surface to be handled.

STRENGTHS

Can also work at 180°, lightweight.



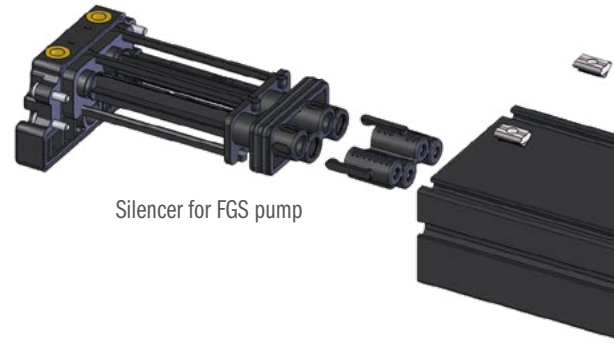
- 1.** Positioning of the gripping system on the object to be handled, parallel to the gripping surface.
- 2.** Approaching of the gripping system until contact is made with the gripping surface. Vacuum activation before contact with the object is advised for high-speed applications.
- 3.** Picking up of the object to be handled.
- 4.** Deposit of the object with vacuum deactivation and blow-off if necessary.





Exploded drawing

Vacuum pump subassembly



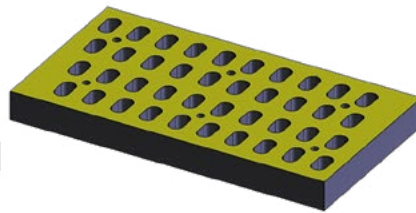
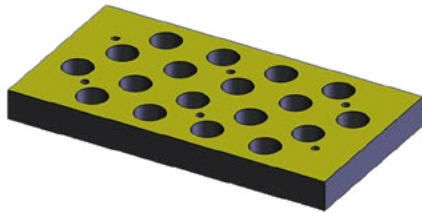
Silencer for FGS pump

CALIBRATED HOLES

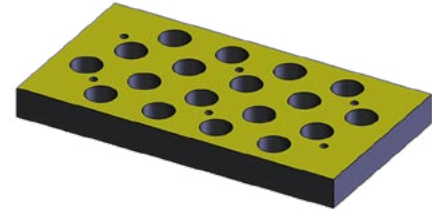
SELF-CLOSING

Medium pitch foam

Fine pitch foam



Medium pitch foam



Configurable code

FGS

120

0200

F20

Type

Width [mm]

Length [mm]

Foam / Suction cup

FGS

120

0200⁽¹⁾

F20 = foam, thickness 20 mm

0400

0600

IS35-SC = V

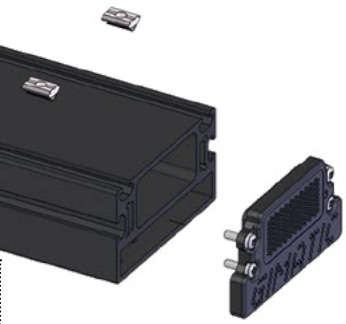
0800⁽²⁾

IS55-SC = V

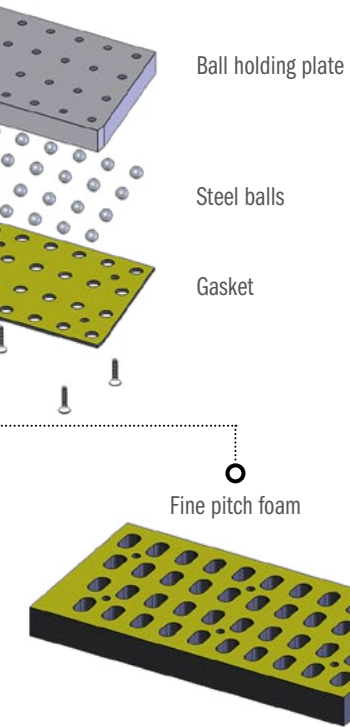
1000⁽³⁾

- (1) Length 0200 cannot be selected with VG.IS55 suction cups and with medium pitch round hole foam.
- (2) Length 0800 cannot be selected with VG.IS35 suction cups.
- (3) Length 1000 is only selectable with foam. No suction cups.
- * 0.6 mm calibrated hole can only be selected with fine pitch oval hole foam.
- * 0.8 mm calibrated hole can only be selected with medium pitch round hole foam.

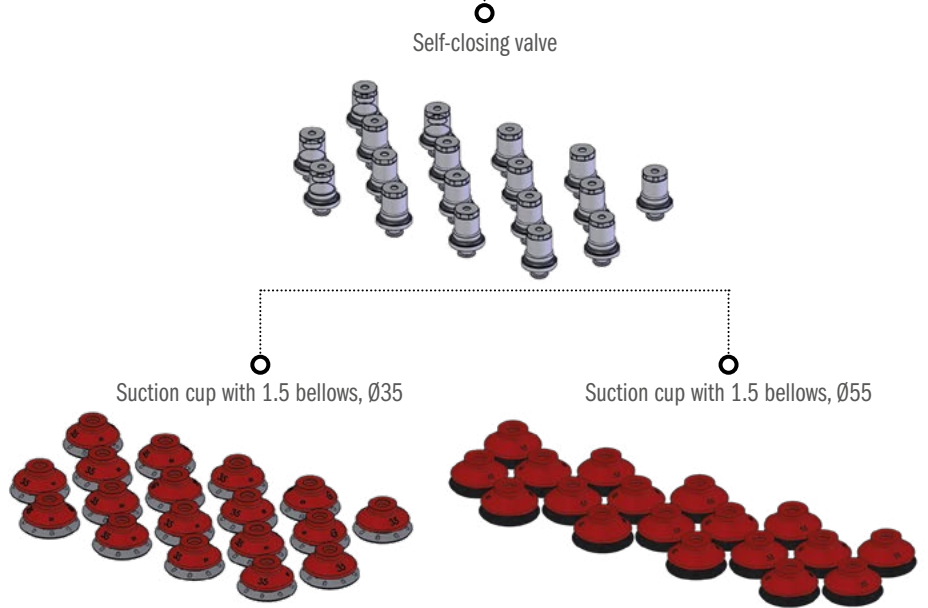
Kit of M8 roll-in nuts



ING VALVE



SELF-CLOSING VALVE



OT

06

EJL

2 XX

Oval, Round/Pitch

Calibrated hole [mm] * / Self-closing valve

Vacuum generation (cartridges)

Number of cartridges

OT = oval, fine pitch

06

EJL

2

RM = round, medium pitch

08

3

G.IS35 suction cup

VA

4

G.IS55 suction cup

6

8



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